REMARKS

In the specification, the Table on page 8 has been amended to correct an obvious error.

Claims 46-58 are presently pending. By these amendments, Applicants request that claims 47, 49, 50, and 55-58 be canceled without prejudice to future presentation. Claims 46 and 48 have been amended and claims 59-65 have been added. It is believed that these amendments add no new matter and their entry is requested.

Previous Amendments

The Examiner has entered the applicant' previous amendment of 12/10/02 only in part. The amendment of 12/10/02 requested entry of a replacement "Table III" for the Table III at page 7 of the specification. Upon review of the specification and all amendments, it appears that Table III in the specification as amended is on page 8 and Applicants request entry of replacement Table III on page 8 of the present specification as amended herein.

35 U.S.C. 112, first paragraph rejections

Claims 46-54 were rejected for lack of a written description. The Examiner is of the opinion that the claims can encompass any 6 non-contiguous amino acids from the disclosed

sequences. The Examiner has asserted that the claims recite a generic formula that is not supported by the specification. The Examiner is of the opinion that the specification does not define any structural features commonly possessed by the members of the genus that distinguish the members of the genus. The claims have been amended to recite a genus with common structural features (i.e., peptides or peptide derivatives of at least 10 contiguous amino acids of the disclosed sequences or having at least 50% homology with the disclosed sequences) and common functional activity (i.e., anchor positions for binding specific MHC class II alleles and reactivity with the specific recited human MHC class II alleles).

In view of the above amendments and remarks, it is believed that the claims as amended are adequately described and withdrawal of the rejection of the claims for lack of written description is requested.

Claims 46-54 were also rejected under 35 U.S.C. 112, first paragraph for lack of enablement. The Examiner is of the opinion that fitting into the MHC groove may be sequence dependent and also notes that the specification does not disclose the anchor positions for binding to DR B1*1601. Smilek et al. was noted by the Examiner for teaching that a single amino acid change can

affect autoreactivity to myelin basic protein. Based on these observations, the Examiner has asserted at Page 7 of the Office Action that "it would require undue experimentation to identify amino acids that have functional activity..."

In response to the enablement rejections, Applicants note that the claims have been amended to recite peptides having at least 10 contiguous amino acids of the disclosed sequences or sequences that are at least 50% homologous to these sequences, have an affinity or specificity that is essentially equivalent to the disclosed peptide sequences and wherein the peptides include anchor positions for binding to human MHC DR3 or DR4 alleles. In addition, the specification teaches that the proliferation assay with GAD-specific T cell lines provides an adequate assay for determining reactivity of a peptide with DR3 or DR4 alleles. Furthermore, the number of possible peptides consisting of 10 consecutive amino acids of SEQ ID NO:'s 2, 3 and 20-39 is 127 and these can readily be determined without undue experimentation. (SEQ ID NO:2 contains 16 possibilities, SEQ ID NO:3 11 and SEQ ID NO:'s 20-39 5 each). Thus, contrary to the Examiner's assertions, the disclosed assay and amino acid sequences provide adequate teaching such that it would <u>not</u> require any undue experimentation to identify the peptides and peptide derivatives by their common

structural features and common functional activity.

The Examiner is further of the opinion that the claims are not enabled based on the teaching of Rammensee, which has been cited as teaching that peptides of more than 9 amino acids in length bind to MHC class II molecules. The Examiner goes on to assert that the length of peptide required for binding to MHC is important and that an undue amount of experimentation would be required to determine shorter peptides that would be capable of binding to the recited alleles. Although Rammensee discloses that peptides more than 9 amino acids do bind to MHC, the reference appears to be silent on shorter peptides. Nevertheless, the claims have been amended to recite peptides of at least 10 contiguous amino acids and it is believed that this amendment overcomes the enablement rejections.

In view of the above amendments and remarks, it is believed that the claims as amended are enabled and withdrawal of rejection of the claims for lack of enablement is requested.

35 U.S.C. 102(b) rejections

Claims 46-53 were also rejected under 35 U.S.C. 102(b) as anticipated by WO95/07992 as "evidenced" by Rammensee et al. The essence of this rejection appears to be based on the Examiner's assertion that WO95/07992 teaches a peptide that is amino acids

1-10 of SEQ ID NO:19 and includes anchor positions for binding to DRB1*0101 that are located in amino acids 1-10 of the peptide. The claims as amended do not recite peptides that bind to the DRB1*0101 MHC allele.

In view of the above amendments and remarks, it is believed that the claims as amended are not anticipated by WO95/07992 as "evidenced" by Rammensee et al. and withdrawal of the rejection of the claims as anticipated is requested.

35 U.S.C. 103(a) rejections

Claim 54 was rejected as obvious and unpatentable over WO95/07992 in view of U.S. Patent 5,750,114 ('114 patent) and Smilek et al. (Smilek). The Examiner is of the opinion that it would have been primae facie obvious to have added an adjuvant as taught by Smilek, such as IL-2 as taught by the '114 patent, to the gad-peptide containing pharmaceutical composition as taught by WO95/07992. The claims as amended do not recite the gad-peptide containing pharmaceutical composition as taught by WO95/07992.

In view of the above amendments and remarks, it is believed that the claims as amended are not anticipated by WO95/07992 as "evidenced" by Rammensee et al. and withdrawal of the rejection

of the claim as obvious is requested.

In view of the above amendments and remarks, it is believed that all of the pending claims satisfy the requirements of the patent statutes. Reconsideration of the instant application, withdrawal of all rejections and early notice of allowance are requested. The Examiner is invited to telephone the undersigned if it is deemed to expedite allowance of the application.

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